EK-DF242-RC-PRE

SCHOLAR

Plus

2400 Modem (DF242)

Also for DF212 Modems

Reference Card

digital™

VALID DMCL COMMANDS

Command	Function
CLEAR	Clears some or all dial memory, callback memory, last valid call log, invalid callback log, or link
DEFAULT	Sets some or all parameters to factory defaults
DIAL	Dials phone number, memory location, $<label> or current use buffer
ENABLE	Enables test or AT command mode
IDLE	Returns modem to idle mode
LIST	Lists some or all parameters, dial memory, callback memory, last valid call log, invalid callback log, modem identification, or current use buffer
SET	Sets some or all parameters, dial memory, callback memory, or access password
READ	Reads some or all parameters from EEPROM
WRITE	Writes some or all parameters to EEPROM

VALID PARAMETER CLASSES

Operational (OPE)
Communications (COM)
Disconnect (DIS)
Error correction (ERR)
Speed buffering (SBU)
Access Security (PRO)
Statistical (STA) read only

To change from DMCL mode to AT mode, use the ENABLE AT command. Warning, dial, and callback memory are cleared.

CLEAR COMMAND

Option	Command Line
Clear single memory	CLEAR Mn<RET> n = memory locations 1 to 30
Clear all memory locations	CLEAR M<RET>
Clear memory with access security	CLEAR Mn/ACC:<ap><RET> or CLEAR M/ACC:<ap><RET> ap = access password
Clear single callback location	CLEAR Cn<RET> n = callback locations 1 to 30
Clear all callback locations	CLEAR C<RET>

CLEAR COMMAND (Cont)

Option	Command Line
Clear callback with access security	CLEAR Cn/ACC:<ap><RET> or CLEAR C/ACC:<ap><RET> ap = access password
Clear last valid callback attempt	CLEAR USA/Last<RET>
Clear invalid callback attempts	CLEAR USA/Log<RET>
Clear link	CLEAR Mn/Link<RET>

DEFAULT COMMAND

Default single parameter	DEFAULT Pn/<Class><RET> n = parameter number
Default all parameters in a class	DEFAULT P/<Class><RET>
Default all parameters in all classes	DEFAULT P/ALL<RET>

DIAL COMMAND

Dial immediate	D T8-603-555-1212<RET>
Dial memory	D Mn<RET> n = memory location 1 to 30
Dial label	D $<Label> where label is up to 6 alphanumeric characters
Dial current use buffer	D<RET>

ENABLE COMMAND

Enable self-test	ENABLE Test<RET>
Enable AT	ENABLE AT<RET> This command changes from DMCL command mode to AT command mode.

IDLE COMMAND

I<RET>

LIST COMMAND

List single parameter	LIST Pn/<Class><RET> n = parameter number and class is either OPE, COM, DIS, ERR, or SBU.
List all parameters in a single class	LIST P/<Class><RET>
List all parameters	LIST P/ALL<RET>
List parameters with access security	LIST PN/<Class>/ACC:<ap><RET> or LIST P/<Class>/ACC:<ap><RET> or LIST P/ALL/ACC:<ap><RET> ap = access password and class is as indicated above
List single memory	LIST Mn<RET> n = memory locations 1 to 30
List all memory locations	LIST M<RET>
List memory with access security	LIST Mn/ACC:<ap><RET> or LIST M/ACC:<ap><RET> ap = access password
List single callback location	LIST Cn<RET> n = callback locations 1 to 30
List all callback locations	LIST C<RET>
List callback with access security	LIST Cn/ACC:<ap><RET> or LIST C/ACC:<ap><RET> ap = access password
List last valid callback attempt	LIST USA/Last<RET>
List invalid callback attempts	LIST USA/Log<RET>
List product identification	LIST Ide<RET>
List current use buffer	LIST<RET>

SET COMMAND – SETTING MODEM PARAMETERS

Option	Selections	Command Line
Modem protocol	(1200) BELL 212= 0	SET P1:0<RET>
	(300) BELL 103= 1	SET P1:1<RET>
	(2400) V.22 bis= 2	SET P1:2<RET>
	(600) V.22 (DF212)= 3	SET P1:3<RET>
Character echo	Off = 0	SET P2:0<RET>
	On= 1	SET P2:1<RET>
Answer mode	Auto = 0	SET P3:0<RET>
	Manual= 1	SET P3:1<RET>
Msg. on incoming call	Off = 0	SET P4:0<RET>
	On= 1	SET P4:1<RET>
Delete key effect	Hardcopy = 1	SET P5:0<RET>
	CRT= 0	SET P5:1<RET>
Enable RDL	Off = 0	SET P6:0<RET>
	On= 1	SET P6:1<RET>
Blind dialing	Off = 0	SET P7:0<RET>
	On= 1	SET P7:1<RET>
Automatic Retrain (Not for DF212)	Off = 0	SET P11:0<RET>
	On= 1	SET P11:1<RET>
Speaker enable	Off = 0	SET P12:0<RET>
	On= 1	SET P12:1<RET>
	On if no CD = 2	SET P12:2<RET>
Speaker volume	Low = 0	SET P13:0<RET>
	Medium = 1	SET P13:1<RET>
	High = 2	SET P13:2<RET>
Answer on n rings	n = 1 to 10 rings (default = 2)	SET P14:n<RET>
Callback timer	n = 1 to 6 (10 to 60 sec) (default = 1)	SET P15:n<RET>
Data bits	7 bits = 3	SET P1:3/COM<RET>
	8 bits = 4	SET P1:4/COM<RET>
Parity	None = 1	SET P2:1/COM<RET>
	Even = 2	SET P2:2/COM<RET>
	Odd= 3	SET P2:3/COM<RET>

SET COMMAND – SETTING MODEM PARAMETERS (Con't)

Option	Selections	Command Line
Stop bits	One = 1	SET P3:1/COM<RET>
	Two = 2	SET P3:2/COM<RET>
Offline XON/XOFF recognition	Off = 0	SET P4:0/COM<RET>
	On= 1	SET P4:1/COM<RET>
Communications protocol	Async = 0	SET P5:0/COM<RET>
	Sync= 1	SET P5:1/COM<RET>
Sync mode timing	Int= 0	SET P6:0/COM<RET>
	Ext= 1	SET P6:1/COM<RET>
	Slave = 2	SET P6:2/COM<RET>
DSR forced	On= 1	SET P7:1/COM<RET>
	Normal = 2	SET P7:2/COM<RET>
CD/CTS signals	Separate = 0	SET P8:0/COM<RET>
	Common= 1	SET P8:1/COM<RET>
Send space disconnect	Off = 0	SET P1:0/DIS<RET>
	On= 1	SET P1:1/DIS<RET>
Receive space disconnect	Off = 0	SET P2:0/DIS<RET>
	On= 1	SET P2:1/DIS<RET>
Carrier loss disconnect	Off = 0	SET P3:0/DIS<RET>
	On= 1	SET P3:1/DIS<RET>
Current loss disconnect	Off = 0	SET P4:0/DIS<RET>
	On= 1	SET P4:1/DIS<RET>
Error correction (EC)	Off= 0	SET P1:0/ERR<RET>
	MNP= 1	SET P1:1/ERR<RET>
	X.PC = 2	SET P1:2/ERR<RET>
EC auto fallback	Off = 0	SET P2:0/ERR<RET>
	On= 1	SET P2:1/ERR<RET>
MNP reaction to "break" from DTE	Disregard= 0	SET P3:0/ERR<RET>
	Destruct Xmit = 1	SET P3:1/ERR<RET>
	Nondestruct Immediate Xmit =2	SET P3:2/ERR<RET>
	Nondestruct Sequenced Xmit =3	SET P3:3/ERR<RET>
MNP reaction to "break" from remote	Disregard= 0	SET P4:0/ERR<RET>
	Destruct Xmit =1	SET P4:1/ERR<RET>
	Nondestruct Immediate Xmit =2	SET P4:2/ERR<RET>
	Nondestruct Sequenced Xmit =3	SET P4:3/ERR<RET>
MNP disconnect type	Nondisruptive =0	SET P6:0/ERR<RET>
	Disruptive= 1	SET P6:1/ERR<RET>

SET COMMAND – SETTING CALLBACK SECURITY

Option	Command Line
Set callback w/o access password	SET Cn/DIAL:<ds>/PASS:<p>/ LEV:<sl><RET>
Set callback with access password	SET Cn/DIAL:<ds>/PASS:<p>/ LEV:<s1>/ACC:<ap><RET>

n = callback location 1 to 30, ds = dial string to be called, p = callback password (6 to 10 characters) sl = security level 1 through 4, and ap = access password

SET COMMAND – SETTING ACCESS PASSWORD

Option	Command Line
Set new password	SET ACC/OLD:<op>/NEW:<np> <RET>

op = the old password and np = the new password

READ COMMAND

Option	Command Line
Read single parameter	READ Pn/<Class><RET> n = parameter number
Read all parameters in a class	READ P/<Class><RET>
Read all parameters in all classes	READ P/ALL<RET>

WRITE COMMAND

Option	Command Line
Write single parameter	WRITE PN/<CLASS><RET> n = parameter number
Write all parameters in a class	WRITE P/<Class><RET>
Write all parameters in all classes	WRITE P/ALL<RET>

AT COMMAND SET To change from AT mode to DMCL mode, use the AT&F1 command. Warning, dial, and callback memory are cleared.

CONFIGURATION COMMANDS

Option	Selections	Command Line
Modem protocol *	BELL	ATB1<RET>
	CCITT	ATB0<RET>
Character echo *	Off	ATE0<RET>
	On	ATE1<RET>
Speaker volume *	Low	ATL0 or 1<RET>
	Medium	ATL2<RET>
	High	ATL3<RET>
Speaker enable *	Off	ATM0<RET>
	On	ATM2<RET>
	On if no carrier	ATM1<RET>
	On except during dial & after carrier	ATM3<RET>
Quiet *	Enable result code	ATQ0<RET>
	Disable result code	ATQ1<RET>
Point to S register *	n = S registers 0 to 27	ATSn<RET>
Write S register *	x = 0 to 255	AT=x<RET>
Read S register *		AT?<RET>
Result code *	Numeric	ATV0<RET>
	Verbose	ATV1<RET>
Extended result code *	103 connect msg/ blind dial	ATX0<RET>
	All connect msg/ blind dial	ATX1<RET>
	All connect msg/ wait for dial tone	ATX2<RET>
	All connect msg/ blind dial/look for busy	ATX3<RET>
	All connect msg/ wait for dial tone/ look for busy	ATX4<RET>
Guard tone Selection*	None	AT&G0<RET>
	550 Hz	AT&G1<RET>
	1800 Hz	AT&G2<RET>
Telephone jack *	RJ-11/RJ-41S/RJ45S	AT&J0<RET>
	No Effect	AT&J1<RET>
PSTN/PLTN select*	PSTN	AT&L0<RET>
	Not supported	AT&L1<RET>
Communications protocol *	Async	AT&M0<RET>
	Sync mode 1	AT&M1<RET>
	Sync mode 2	AT&M2<RET>
	Sync mode 3	AT&M3<RET>
Pulse dial make/break*	39%/61%	AT&P0 <RET>
	33%/67%	AT&P1 <RET>

CONFIGURATION COMMANDS (Cont)

RTS/CTS options*	CTS delay = S26	AT&R0 <RET>
	CTS ON when online and ready	AT&R1 <RET>
Sync mode clock source*	Internal	AT&X0 <RET>
	External	AT&X1 <RET>
	slave	AT&X2 <RET>

ERROR CORRECTION COMMANDS

Option	Selections	Command Line
Auto fallback character	n = 0 to 127 ASCII (0 = no fallback character)	AT$An<RET>
Send break	n = 0 to 9 (.1 of sec) (0 = .1 second)	AT$Bn<RET>
Reaction to "break" from DTE	Disregard	AT$D0 or 4<RET>
	Empty buffers/ send break	AT$D1<RET>
	Immediately send break	AT$D3<RET>
	Send break and data	AT$D5<RET>
Reaction to "break" from remote	Disregard	AT$D2<RET>
	Empty buffers/ send break	AT$D0 or 1<RET>
	Immediately send break	AT$D2 or 3<RET>
	Send break and data	AT$D4 or 5<RET>
MNP service type	Stream	AT$L0<RET>
	Block	AT$L1<RET>
Error correction (EC)	MNP no fallback	AT$M1<RET>
	MNP auto-fallback	AT$M2<RET>
	X.PC	AT$M3<RET>
Originate link	MNP link request	AT$O0<RET>
EC inactivity timer	n = 0 to 90 minutes	AT$Tn<RET>
Accept EC link		AT$U<RET>
Start EC link	MNP	AT$Y0<RET>
Shut down EC		AT$Z<RET>

IMMEDIATE ACTION COMMANDS

Option	Selections	Command Line
Go off hook in answer mode *		ATA
Reexecute last command *		A/
Dial immediate *	n = dial string	ATDn<RET>
Dial memory *	n = memory locations 1 to 30 (ATDS<RET> = default to number stored in AT&Z)	ATDSn<RET>
Switch hook *	Go on hook (hang up) Go off hook	ATH0<RET> ATH1<RET>
Return to on-line *	On-line On-line and retrain	ATO0<RET> ATO1<RET>
Long space disconnect *	Enable Disable	ATY1<RET> ATY0<RET>
Load stored profile *		ATZ<RET>
Carrier *	Always on Follow carrier from remote unit	AT&C0<RET> AT&C1<RET>
Loss of DTR *	Disregard Go to command Hang up & go to command Reset	AT&D0<RET> AT&D1<RET> AT&D2<RET> AT&D3<RET>
Load factory profile *		AT&F0<RET>
Change from AT to DMCL mode		AT&F1<RET>
Write active profile *		AT&W
Store dial string *	n = memory locations 1 to 30 and ds = dial string (AT&Z<ds><RET> = default number)	AT&Zn<ds><RET>

SPEED BUFFERING COMMANDS

Option	Selections	Command Line
Modem mode	Get from %S	AT%A0<RET>
	Auto-select	AT%A1<RET>
DTE flow control	None	AT%F0<RET>
	X-ON/X-OFF	AT%F1<RET>
	RTS/CTS	AT%F2<RET>
	Both	AT%F3<RET>
Speed buffering (SB)	Off	AT%M0<RET>
	On	AT%M1<RET>
Default mode	V.22 bis	AT%S0<RET>
	V.22 or Bell 212	AT%S1<RET>
	Bell 103	AT%S2<RET>

CALLBACK SECURITY COMMANDS

Option	Selections	Command Line
Store callback dial string	n = callback locations 1 to 30 and ds = dial string	AT \ Cn:<ds> <RET>
Display single callback memory	n = callback locations 1 to 30	AT \ Ln<RET>
Display all callback memory		AT \ L0<RET>
Store callback password	n = callback locations 1 to 30 and pw = password (6 to 10 characters)	AT \ Pn:<pw> <RET>
Display single callback error log	n = 1 to 30	AT \ Qn<RET>
Display all callback error log		AT \ Q0<RET>
Set callback security level	n = callback locations 1 to 30 and m = security levels 1 to 4	AT \ Sn:m<RET>
Callback timer	n = 1 to 6 (10 to 60 sec)	AT \ Tn<RET>
Clear callback memory	n = callback locations 1 to 30	AT \ Zn<RET>
Clear all callback memory		AT \ Z0<RET>

MISCELLANEOUS COMMANDS

Option	Selections	Command Line
Auto retrain (Not for DF212)	Enable	AT&A1<RET>
	Disable	AY&A0<RET>
Display all dial memory		AT&B0<RET>
Display single dial memory	n = dial memory locations 1 to 30	AT&Bn<RET>
Extended EIA CD/CTS	Follow V.25 bis protocol	AT&C2<RET>
Clear single dial memory	n = dial memory locations 1 to 30	AT&Yn<RET>
Clear all dial memory		AT&Y0<RET>

DIAGNOSTIC COMMANDS

Option	Selections	Command Line
Display product code & checksum *	Product code	ATI0<RET>
	Calculate checksum and display	ATI1<RET>
	Compare checksum	ATI2<RET>
Test command *	End all tests	AT&T0<RET>
	Start ANL	AT&T1<RET>
	Start DL	AT&T3<RET>
	Grant RDL	AT&T4<RET>
	Do not grant RDL	AT&T5<RET>
	Start RDL	AT&T6<RET>
	RDL with self-test	AT&T7<RET>
	ANL with self-test	AT&T8<RET>

* Indicates commands are compatible with Hayes Smartmodem 2400 (TM) command set. Other commands are enhancements for DF242 and DF212 modems.

S Register Values — **The values stored in each of the S registers are listed below.**

Register	Range	Units	Factory Default (decimal)	Description
S0*	0-255	Rings	0	Number of rings to answer on.
S1	0-255	Rings	0	Ring count.
S2	0-127	ASCII	43	Escape code character.
S3	0-127	ASCII	13	Carriage return character.
S4	0-127	ASCII	10	Line feed character.
S5	0-127	ASCII	8	Back space character.
S6	0-255	Seconds	2	Wait for dial tone.
S7	1-30	Seconds	30	Wait for carrier.
S8	0-255	Seconds	2	Pause time for comma.
S9	1-255	Tenths/sec	6	Carrier detect response time.
S10	1-255	Tenths/sec	14	Lost carrier to hang-up time.
S11	—	—	—	Not used.
S12	0-255	1/50 sec	50	Escape code guard time.
S13	—	—	—	Not used.
S14*	—	None	176	Bit mapped options register.
S15	—	—	—	Not used.
S16	—	None	0	Modem test options.
S17	—	—	—	Not used.
S18*	0-255	Seconds	0	Test timer.
S19	—	—	—	Not used.
S20	—	—	—	Not used.
S21*	—	None	0	Bit mapped options register.
S22*	—	None	118	Bit mapped options register.
S23*	—	None	7	Bit mapped options register.
S24	—	—	—	Not used.
S25*	0-255	Seconds	5	Delay to DTR (sync only).
S26*	0-255	1/100 sec	0	RTS to CTS delay (½-duplex).
S27*	—	None	0	Bit mapped options register.

Note:
The asterisk indicates which S registers are permanently stored by the use of the &W command. Values are preserved when modem is powered down. These values are restored when power is applied or when the Z command is used.